

In the Claims:

On page 14, cancel line 1, and substitute the following left-hand justified heading therefor:

--I Claim As My Invention:--

5 Please cancel claims 1-9, without prejudice, and substitute the following claims therefor:

10. An integrated circuit, comprising:

a plurality of logic gates for implementing a logic function of the integrated circuit; and

10 a self-test circuit for performing an internal self test of the plurality of logic gates, the self-test circuit including a test pattern generator for generating a test pattern, a test response analyzer for evaluating a test response, and an input/output circuit via which the self-test circuit further performs a logic test of an external circuit, the self-test circuit testing both the plurality of logic gates and the external circuit at the same time, wherein a first part of the test pattern is supplied to the plurality of logic gates and a second part of the test pattern is supplied to the external circuit via the input/output circuit, and the test response is produced from a first part of the test response from the plurality of logic gates and a second part of the test response from the external logic circuit.

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20 11. An integrated circuit as claimed in claim 10, wherein both the test pattern generator and the test response analyzer are linear-feedback shifted registers.

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12. An integrated circuit as claimed in claim 10, wherein the test pattern generator generates pseudo-random vectors as the test pattern.

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13. An integrated circuit as claimed in claim 10, wherein the input/output circuit includes input/output drivers for sending and receiving unidirectional signals between the self-test circuit and the external circuit.

14. An integrated circuit as claimed in claim 10, wherein the input/output circuit includes controllable input/output drivers for sending and receiving bidirectional signals between the self-test circuit and the external circuit, and wherein the self-test circuit further includes a control device which controls the controllable input/output drivers.

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15. An integrated circuit as claimed in claim 14, wherein the control device controls both the self-test circuit and the output circuit such that an initialization of the external circuit is performed in a first test cycle and the self test of the plurality of logic gates and the logic test of the external circuit are performed in a second test cycle.

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16. An integrated circuit as claimed in claim 14, wherein the input/output circuit includes a bus connection for connecting to an external bus structure and the control device includes a bus control, wherein external circuit elements connected to the bus structure are selectively selected for a self-test via respective enable signals.

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20 17. An integrated circuit as claimed in claim 16, wherein the bus control includes a counter for counting a bus clock signal, wherein the controllable input/output drivers are only selected during all even-numbered clock cycles of the bus clock signal and the respective enable signals are output sequentially during all odd-numbered clock signals of the bus clock signal for enabling the respective external circuit elements.

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18. An integrated circuit as claimed in claim 10, wherein the input/output circuit can be selectively deactivated.